UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/973,719	10/11/2001	Nozomu Takano	P21547	5759

7055 7590 07/31/2003

GREENBLUM & BERNSTEIN, P.L.C.
1950 ROLAND CLARKE PLACE
RESTON, VA 20191

EXAMINER
FEELY, MICHAEL J

ART UNIT	PAPER NUMBER
1712	10

DATE MAILED: 07/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/973,719	TAKANO ET AL.	
	Examin r	Art Unit	
	Michael J Feely	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 April 2003* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,6-9,12-17 and 19-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,9,17,20 and 21* is/are rejected.

7)☒ Claim(s) *2,6-8,12-16 and 19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Pending Claims

1. Claims 1-3, 6-9, 12-17, and 19-21 are pending in the instant application.

Claim Objections

2. The objection to claim 11, set forth in § 2 of the previous Office action, has been overcome by amendment.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. The rejection of claims 1-19 under 35 USC 112, second paragraph, set forth in § 3-4 of the previous Office action, has been withdrawn.

Specification

5. The objection to the Specification, set forth in § 5 of the previous Office action, has been withdrawn.

Response to Amendment

6. The declaration filed on April 21, 2003 under 37 CFR 1.131 is sufficient to overcome the Furukawa et al. reference (US Pat. No. 6,303,681).

Response to Arguments

7. Applicant's arguments, see pages 5-6 of paper no. 8, filed April 21, 2003, with respect to: *1)* the rejection(s)of claim(s) 1-5, 8-10, and 12-19 under 35 USC 102/103, and *2)* the rejection(s)of claim(s) 11 under 35 USC 103 (over Takano et al.: WO 97/01595 and US

2001/0053447 A1) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn.

However, upon further consideration, a new ground(s) of rejection is made in view of: Obayashi et al. (US Pat. No. 4,714,650) for claims 1, 3, 9, 20, and 21; and Caldwell et al. (US Pat. No. 4,666,765) for claim 17.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language;
>
> or
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

9. The rejection of claims 1, 4-7, and 9 under 35 USC 102(e) over Yamamoto et al. (US Pat. No. 6,277,908), as set forth in § 10 of the previous Office action, has been overcome by amendment.

10. Claims 1, 20, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Obayashi et al. (US Pat. No. 4,714,650).

Regarding claims 1, 20, and 21, Obayashi et al. disclose ***(1)*** an incombustible resin composition (column 3, lines 41-50) comprising a silicone oligomer which comprises an aromatic group (column 3, lines 41-50; column 2, lines 57-65), a metal hydrate which comprises aluminum hydroxide (column 4, lines 6-26; column 5, lines 37-44), and a resin material (column 3, lines 41-50; column 2, lines 57-65), wherein the metal hydrate is 20% by weight or more in the total resin composition (column 4, lines 11-16; column 5, lines 45-50); ***(20)*** wherein each siloxane unit of the silicone oligomer has at least one aromatic group (column 2, lines 57-65); and ***(21)*** wherein the aluminum hydroxide has an average particle diameter of 5 μm or less (column 4, lines 20-23).

It should be noted that the polysiloxane disclosed in Obayashi et al. meets the limitations of both the "silicone oligomer" and the "resin material". Because the claim language fails to distinguish these components, the reference anticipates the claim.

11. Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Caldwell et al. (US Pat. No. 4,666,765).

Regarding claim 17, Caldwell et al. disclose a method for preparing an incombustible resin composition (column 1, line 65 through column 2, line 8), which comprises: blending a metal hydrate (column 4, lines 38-40) with a processing liquid containing silicone oligomer

(column 3, line 65 through column 4, line 14; column 4, lines 27-37), and then blending other resin components (column 4, lines 15-22).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Obayashi et al. (US Pat. No. 4,714,650).

Regarding claim 9, Obayashi et al. fail to explicitly disclose that the silicon oligomer has a degree of polymerization in the range of 2 to 7000. However, Applicant fails to show criticality of this range.

Degree of polymerization had a direct effect on the viscosity of a material, which has a direct effect on the processability of the polymer. Therefore, degree of polymerization is a result effective variable.

In light of this, it has been found that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover optimum or workable ranges by routine experimentation – *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955); and *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Therefore, if not explicitly taught in the reference, then the teachings would have been obvious to one of ordinary skill in the art at the time of the invention.

Claim Rejections - 35 USC § 102/103

14. Claim 3 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Obayashi et al. (US Pat. No. 4,714,650).

Regarding claim 3, Obayashi et al. does not explicitly disclose that, "the metal hydrate has a surface *processed* with a silicone oligomer;" however, where the silicone oligomer and metal hydrate are mixed together to form the silicone polymer layer of Obayashi et al., the surface of the metal hydrate would have inherently been *processed* to some degree.

Furthermore, claim 3 is a product-by-process claim. It has been found that, "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process" – *In re Thorpe*, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Therefore, if not explicitly taught in the reference, then the teachings would have been obvious to one of ordinary skill in the art at the time of the invention.

Allowable Subject Matter

15. Claims 2, 6-8, 12-16, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 2, the closest prior art is Obayashi et al.; however, the reference fails to teach or suggest the presence of a resin material other than siloxane resin in their incombustible composition.

Regarding claims 6 and 7, the closest prior art is Obayashi et al.; however, the reference fails to teach or suggest a combination of metal hydroxides, specifically ***6)*** aluminum hydroxide with magnesium hydroxide, and *7)* aluminum hydroxide with calcium hydroxide.

Regarding claim 8, the closest prior art is Obayashi et al.; however, the reference fail to teach or suggest a silicone oligomer having an aromatic group and a terminal silanol group. Obayashi et al. disclose the use of polydiphenylsiloxane and polymethylphenylsiloxane; however, the fail to teach or suggest a terminal silanol group.

Regarding claims 12, the closest prior art is Obayashi et al.; however, they fail to teach or suggest a prepreg using the composition of claim 1. Obayashi et al. disclose a composite laminate having a fibrous fabric and two silicone layers formed "on both surfaces of" the fibrous fabric. This fibrous fabric *could* be impregnated; however, Obayashi et al. is silent regarding an impregnation step. Claims 13-16 and 19 are allowable because they depend on claim 12.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Feely whose telephone number is 703-305-0268. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on 703-308-2340. The fax phone numbers for the

organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Michael J. Feely
July 28, 2003

Robert Dawson
Supervisory Patent Examiner
Technology Center 1700